

Exhibit P-40, BUDGET ITEM JUSTIFICATION							DATE:		February 2004				
APPROPRIATION/BUDGET ACTIVITY					P-1 ITEM NOMENCLATURE								
Aircraft Procurement, Navy/APN-5 Aircraft Modifications					AV-8B Series Modifications								
Program Element for Code B Items:					Other Related Program Elements								
	Prior Years	ID Code		FY 2003	FY 2004	*FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total	
QUANTITY		A											
COST (In Millions)	375.5	A		58.6	57.4	20.8	28.7	16.6	16.3	16.6	46.3	636.8	
<p>This line item funds modifications to AV-8B aircraft. The AV-8B is a single engine, single crewmember aircraft capable of vertical/short take-off and landing (V/STOL) operations. The AV-8B meets the Marine Corps requirements for a light attack aircraft to provide responsive offensive air power that can operate austere forward bases in direct support of ground forces. The overall goal of the modifications budgeted in FY 2005 is to include continued incorporation of Operational and Safety improvements to the aircraft; completion of power cable MIL-W-81381 wire with MIL-W-22759 wire; continued update of TAV-8B trainer aircraft to better align with operational aircraft; continued incorporation of OSCAR; completion of the aircraft arming unit with ZRF; and incorporation of AV-8B F402-RR-408 Engine safety and operational changes.</p> <p>The AV-8B active inventory (30 April 2002) consists of 4 major configurations: 17 two-seat TAV-8B aircraft, 20 DAY Attack aircraft, 41 NIGHT Attack Aircraft, and 94 Night Attack/RADAR aircraft.</p> <p>In addition, there are 2 undelivered aircraft that are in the Remanufacture process. The production (Remanufacture) program will deliver the last aircraft in Sep 03. Retrofit quantities of each ECP depend on the aircraft configuration type if & when the change was introduced into production.</p>													
(TOA, \$ in Millions)													
OSIP No.	Description	Prior Years		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total	
1-91	Omnibus O&S Improvements	87.3		4.9	1.5	1.2						95.0	
34-93	Horizontal Stabilator Fatigue Impr.	19.3		0.9								20.2	
3-96	KAPTON Wire Replacement	30.7		2.9	1.3	1.1						36.0	
25-99	TAV-8B Performance Upgrade	100.1		2.2	1.9	2.0						106.2	
23-00	Litening II Pod	120.7		28.0	37.0							185.7	
12-02	Open Systems Core Avionics Requirement & Precision Strike	17.5		18.2	9.7	11.3	24.1	12.4	13.2	10.2	8.4	125.0	
06-03	Zero Retention Force			1.5	1.4							2.9	
02-04	Engine Life Management Program				4.5	5.2	3.2	3.9	2.8	4.0	8.2	31.8	
XX-06	Obsolescence Replacement						1.3	0.3	0.3	2.4	29.8	34.1	
TOTAL		375.5		58.6	57.4	20.8	28.7	16.6	16.3	16.6	46.3	636.8	
<p>* \$1.2M was identified in prior years to forward finance future requirements and the corresponding adjustment was made in FY 2005. Note: Totals may not add due to rounding.</p>													

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: OMNIBUS Operational & Safety Improvements (OSIP 1-91)

MODELS OF SYSTEM AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar

TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION:

Each ECP description includes the AV-8B configuration affected by the change and, if applicable, when it was introduced into production.

ECP-217, Emergency Battery Backup provides electrical power to the landing gear in the event of a major power failure - TAV-8B, Day, relocated from the engine bay to the cockpit to reduce the failure rate - TAV-8B, Day, Night, and FY99 & prior Radar. **ECP-246**, Canopy Restraint incorporates an improved pyrotechnic device to provide separation to the pilot on ejection - TAV-8B. **ECP-248**, Power Lever Angle Unit (PLAU) provides critical in-flight engine control, is being relocated from the engine bay to the cockpit to reduce the failure rate - TAV-8B, Day, Night, and FY99 & prior Radar. **ECP-251**, Nose Wheel Steering (NWS), a Safety change, provides improved pilot control over nose wheel steering responsiveness for critical landing conditions - TAV-8B, Night, FY96 & prior Radar. **ECP-254**, Inlet Guide Vane Controller (IGVC), a Safety change, provides improved -406 engine (via **RR-ECP-3759**) responsiveness during critical maneuvers - TAV-8B, Night, FY96 & prior Radar. **ECP-255R1**, Digital Flap Controller (DFC), a Safety change, provides improved flap control range and failure response during critical operations - TAV-8B, Day, Night, FY97 & prior Radar. **ECP-256**, Jet Pipe Temperature (JPT), a Safety change, eliminates the erroneous engine temperature returns - TAV-8B, Night, and FY96 & prior Radar. **ECP-257**, Digital Electronic Controller Unit (DECU), a Safety Change provides an improved power supply that corrects power interruptions during critical maneuvers - TAV-8B, Night, and FY96 & prior Radar. **ECP-269R1**, Frame 12, incorporates high vibration structural modifications to absorb increased vibrations which cause fatigue cracks - TAV-8B, Night & Radar. **ECP-271**, An improved mounting bracket for the 100% LERX structure reduces maintenance problems and improves readiness - Night, FY96 & prior Radar. **ECP-278**, installs more durable cables for the Radar Warning Radar system - Night, Radar.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

NWS flight test completed Feb 98. NWS & IGVC V&V completed third quarter FY-98. DFC and JPT V&V completed second quarter FY-98. DECU V&V completed first quarter FY-98 and incorporation initiated. Initial design/V&V of ECP-217 was completed in 2nd quarter FY-90 and a replacement battery was identified in 3rd quarter FY-97 to allow final installations. ECP-271 design/V&V was completed 3rd quarter FY-99. Installation reinitiated to complete modification program. ECP-278 design completed in 2nd quarter FY-99. L660 GTS/APU design was completed 2nd quarter FY-97 and rework initiated in 3rd quarter FY-97. L580 GTS/APU modification rework was completed in 4th quarter FY-97. GEC-11 modification was completed 4th quarter FY-97.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits																				
ECP-217 (Emerg Battery) Kit	67	1.2																		
ECP-246 (TAV Canopy Restraint) Kit	34	0.7																		
ECP-248 (PLAU Resolver) Kit	54	2.8																		
ECP-251 (NWS) Kit	94	3.2																		
ECP-254 (IGVC) Kit	92	0.2																		
ECP-255R1 (DFC) Kit	141	0.3																		
ECP-256 (JPT) Kit	192	0.1																		
ECP-257 (DECU) Kit	99	0.0																		
ECP-269R1 (Frame 12) Kit	60	0.7																		
ECP-271 (100%LERX) Kit	53	0.2																		
ECP-278 (RWR Cable) Kit	136	0.8																		
ECP-300 Landing Gear Control Handle	184	0.8																		
G1.0 DSM Modules Kit	154	1.2																		
GEC-11 (CEDE Unit) Kit	181	0.1																		
GEC-002 (NPMIA Unit) Kit	43	2.8																		
L580 (GTS/APU Duct) Kit		0.0																		
L660 (GTS/APU Protect Unit) Kit	329	0.9																		
PRIOR YEARS	528	8.3																		
Installation Kits N/R		7.8																		
Installation Equipment																				
ECP-248 (PLAU) Equip	54	0.1																		
ECP-255R1 (DFC) Equip	161	5.4																		
ECP-254/RR-3759 (IGVC) Equip	125	17.1	6	1.0																
ECP-296 (ALR-67 Antennae)	178	0.8																		
Installation Equipment N/R																				
Engineering Change Orders																				
Data		2.0																		
Training Equipment		7.8																		
Support Equipment		2.3																		
ILS		0.3																		
Other Support		10.1		1.2		0.1														
Interim Contractor Support																				
Installation Cost		9.1		2.7		1.4		1.2												
TOTAL PROCUREMENT		87.3		4.9		1.5		1.2												

1. Totals do not add due to rounding

2. Asterisk indicates amount less than 50K

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar MODIFICATION TITLE: Operational & Safety Improvement Modifications (01-91)

INSTALLATION INFORMATION: This reflects multiple ECP installations begun in FY-94. Quantities will not match Kit Procurement line due to "O" Level Installs, Contractor Warranty Kits (ECP-271 & ECP-269R1) & piece part attrition upgrades.

METHOD OF IMPLEMENTATION: Installation will be accomplished by Naval Aviation Depot drive in modification.

ADMINISTRATIVE LEADTIME: It varies with each ECP Months PRODUCTION LEADTIME: It varies with each ECP Months

CONTRACT DATES: FY 2003 Multiple FY 2004 Multiple FY 2005 Multiple

DELIVERY DATE: FY 2003 Multiple FY 2004 Multiple FY 2005 Multiple

(\$ in Millions)																			
Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY2008		FY 2009		To Complete		TOTAL
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	\$
FY 2002 & PY (1421) kits	1100	9.1	178	2.7	98	1.4	45	1.2											
FY 2003 (6) kits							6	*											
FY 2004 () kits																			
FY 2005 () kits																			
FY 2006 () kits																			
FY 2007 () kits																			
FY 2008 () kits																			
FY 2009 () kits																			
To Complete () kits																			
TOTAL	1100	9.1	178	2.7	98	1.4	51	1.2											

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	1100	44	45	44	45	24	25	24	25	13	13	13	12				
Out	1100	44	45	44	45	24	25	24	25	13	13	13	12				

	FY 2007				FY2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a		INDIVIDUAL MODIFICATION																																																																																																																																																																																																																																																																																																																																																																																																																															
MODIFICATION TITLE: <u>Horizontal Stabilator Fatigue Improvements (OSIP 34-93)</u>																																																																																																																																																																																																																																																																																																																																																																																																																																	
MODELS OF SYSTEM AFFECTED: <u>TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar</u>										TYPE MODIFICATION: <u>Structural</u>																																																																																																																																																																																																																																																																																																																																																																																																																							
<p>DESCRIPTION/JUSTIFICATION:</p> <p>Between November 1992 and February 1993 T/AV-8B operators reported 35 incidents of cracking in stabilator center section aluminum alloy ribs and spars. McDonnell Douglas Aerospace Corp. (MDA) has defined a new stabilator center section that changes the structural material to titanium alloy, provides selective material gage increases and changes stabilator pivot fittings from titanium alloy to steel. These changes were incorporated in FY 1991 production aircraft Cum 241 and subsequent. This OSIP provides for the design, test and procurement of an ECP-243R1 airframe change kit for retrofit of the new stabilator center section in all 223 in-service T/AV-8B aircraft and installation into all spare stabilators.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:</p> <p>Development is not required. Basic engineering and design are complete. Contractor laboratory testing and Contractor/Navy flight testing of the modified stabilator was completed in September 1994. Validation and verification of a production representative aircraft change kit and technical directive by the NADEP was completed in May 1993.</p> <p>FINANCIAL PLAN (TOA, \$ in Millions):</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Prior Years</th> <th colspan="2">FY 2003</th> <th colspan="2">FY 2004</th> <th colspan="2">FY 2005</th> <th colspan="2">FY 2006</th> <th colspan="2">FY 2007</th> <th colspan="2">FY 2008</th> <th colspan="2">FY 2009</th> <th colspan="2">To Complete</th> <th colspan="2">TOTAL</th> </tr> <tr> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> </tr> </thead> <tbody> 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Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: TAV-8B, AV-8B Day, AV-8B Night, AV-8B Night/Radar MODIFICATION TITLE: HORIZONTAL STABILATOR FATIGUE IMPROVEMENTS (OSIP 34-93)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: The first kit was provided at no cost to the government. The installation is being accomplished by Navy Drive-in Modification.

ADMINISTRATIVE LEADTIME: 3 Months PRODUCTION LEADTIME: 8 Months

CONTRACT DATES: FY 2003 _____ FY 2004 _____ FY 2005 _____

DELIVERY DATE: FY 2003 _____ FY 2004 _____ FY 2005 _____

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (249) kits	237	6.8	12	0.9																
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL	237	6.8	12	0.9																

**NOTE: Installation includes 27 spare stabilators.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	237	3	3	3	3												
Out	237	3	3	3	3												

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a**INDIVIDUAL MODIFICATION**MODIFICATION TITLE: KAPTON Wire Replacement (OSIP 3-96)MODELS OF SYSTEM AFFECTED: TAV-8BTYPE MODIFICATION: Safety**DESCRIPTION/JUSTIFICATION:**

The Kapton Wiring Replacement (ECP-277) S,R&M modification is required to replace the MIL-W-81381 (KAPTON) wiring with MIL-W-22759 (TEFZEL) wiring in TAV-8B aircraft delivered prior to September 1989. TAV-8B's with KAPTON (MIL-W-81381) insulated wire suffer from high failure rate due to frequent incidents of chafing resulting in wire fires. The KAPTON (MIL-W-81381) wired airplanes also require frequent and costly maintenance actions to continue flying. Replacement of this wiring is expected to improve aircraft readiness. This modification was introduced in production in FY 1989 TAV-8B aircraft cum 16 & subsequent which deleted the KAPTON (MIL-W-81341) insulated wiring and replaced it with irradiated TEFZEL wiring which is much more resistant to chafe and fire. This modification will be retrofitted in 12 of the 13 TAV-8B aircraft (cum 15 & below) currently in the inventory.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

This modification was designed and incorporated in all production baseline aircraft delivered after September 1989. AFP not applicable. An installation validation commenced July 2000 and completed Aug 2001.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits																				
ECP 277 (Kapton Wire) Kit	12	16.3																		
Installation Kits N/R		2.2																		
Installation Equipment																				
ECP 277 (Kapton Wire) Equip																				
Installation Equipment N/R		0.8																		
Engineering Change Orders																				
Data		1.0																		
Training Equipment																				
Support Equipment																				
ILS		*																		
Other Support		1.6																		
Interim Contractor Support																				
Installation Cost	6	8.9	2	2.9	2	1.3	1	1.1												
TOTAL PROCUREMENT		30.7		2.9		1.3		1.1												

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 50K

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED:

TAV-8BMODIFICATION TITLE: KAPTON Wire Replacement (OSIP 3-96)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION:

AFC installation will be accomplished by Naval Aviation Depot Drive-in Mod.

ADMINISTRATIVE LEADTIME:

5 Months

PRODUCTION LEADTIME:

12 Months

CONTRACT DATES:

FY 2003 _____

FY 2004 _____

FY 2005 _____

DELIVERY DATE:

FY 2003 _____

FY 2004 _____

FY 2005 _____

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (12) kits *	6	8.9	2	2.9	2	1.3	1	1.1												
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL	6	8.9	2	2.9	2	1.3	1	1.1												

* Only 11 of the 12 kits bought will be installed.

Installation Schedule

	FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	6	1	1			1	1			1							
Out	6	1	1			1	1			1							

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: TAV-8B Performance Upgrade (OSIP 25-99)

MODELS OF SYSTEM AFFECTED: TAV-8B

TYPE MODIFICATION: Upgrade

DESCRIPTION/JUSTIFICATION:

Update all AV-8B Trainer aircraft to better align with operational aircraft by incorporating Night Vision Goggle (NVG) lighting and the -408 engine. ECP-276 (NVG lighting) incorporation will allow for training of fleet pilots in NVG tactical flight operations during initial AV-8B flight training under the supervision of an instructor pilot. Currently, all NVG training is performed in the operational squadrons in single piloted aircraft after completion of initial pilot training. Early increase in pilot NVG proficiency and safer training environment. Improves configuration standardization with current Night/Radar NVG compatible components. ECP-276 will be installed on 17 aircraft currently in the inventory. The -408 engine is not thrust limited to the extent of the current -406A/B engines. ECP-275 (-408 Engine) provisions incorporation will allow expansion of VSTOL training time and increase the vertical landing performance safety margin by 2,000 pounds of thrust. Additionally, initial pilot training will be at the same performance levels experienced in the operational squadrons. Configuration consistency between Trainer and fleet Night/Radar aircraft will also be enhanced. Trainer aircraft cum T16 and above have -408 provisions incorporated and require engines only. Trainer aircraft cum T1 through T15 require both -408 engine provision kits and -408 engines. ECP-275 will be installed on 12 of the 13 T15 & below aircraft currently in the inventory. ECP-288 will field a modified Operational Flight Program to support the full -408A engine capabilities. ECP-291 installs the Night Attack Display computer. ECP-305 installs the Throttle Grip and Stick. Due to the upgraded engine, Frame 12 stiffeners will be installed on all TAV-8B aircraft concurrently with ECP-275.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

Initial design of the NVG and -408A aircraft kits began in November 1998. Engine provisioning software development (ECP-288) was initiated in November 1998.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits																				
ECP-275, -408 Engine Kit (T2-15)	12	4.2																		
IAFC-398, Fr.12 Kit (T2-15)	12	0.3																		
ECP-276, NVG Ltg. Kit (T2-24)	17	4.3																		
AFC-273, Kit (T2-24)	20	0.1																		
Installation Kits N/R		2.6																		
Installation Equipment																				
-408 Engines, ECP-275 (T2-15)	12	41.7																		
-408 Engines, ECP-275 (T16-24)	6	20.4																		
Engine Monitoring Unit, ECP-275	20	1.2																		
Stby. Altimeter, ECP-276 (T2-24)	36	0.5																		
Eng. Perf. Ind. (EPI), ECP-276 (T2-24)	42	0.3																		
CDC/CDM, ECP-276 (T2-24)	51	1.0																		
ACNIP, ECP-276 (T2-24)	18	0.2																		
Fuel Qty Ind., ECP-276 (T2-24)	26	0.1																		
Airspeed Ind., ECP-276 (T2-24)	52	0.1																		
ECP-288 Mission Computer (T2-24)	16	2.0																		
ECP-288 Warfare Mgmt Computer	17	3.7																		
ECP-291 NA Disp Computers (T2-24)	17	1.7																		
ECP-291 Throttle Grip & Stick(T2-24)																				
Installation Equipment N/R		0.2																		
Engineering Change Orders																				
Data		2.2		*																
Training Equipment		0.2																		
Support Equipment		0.2																		
ILS							0.1													
Other Support		9.4		*																
Interim Contractor Support																				
Installation Cost	19	3.5	16	2.1	12	1.9	7	1.9												
TOTAL PROCUREMENT		100.1		2.2		1.9		2.0												

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 50K

Exhibit P-3a

Exhibit P-3a

MODELS OF SYSTEMS AFFECTED: TAV-8B MODIFICATION TITLE: TAV-8B Performance Upgrade (OSIP 25-99)

INSTALLATION INFORMATION:

METHOD OF IMPLEMENTATION: AFC installation will be accomplished by Naval Aviation Depot Drive-in Mod. ECP-275 will be installed concurrent with ECP-276 on aircraft cum T-15 & below.

ADMINISTRATIVE LEADTIME: Varies for each ECP PRODUCTION LEADTIME: Varies for each ECP

CONTRACT DATES: FY 2003 _____ FY 2004 _____ FY 2005 _____

DELIVERY DATE: FY 2003 _____ FY 2004 _____ FY 2005 _____

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (61) kits*	19	3.5	16	2.1	12	1.9	7	1.9												
FY 2003 () kits																				
FY 2004 () kits																				
FY 2005 () kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL	19	3.5	16	2.1	12	1.9	7	1.9												

* Only 54 of the 61 kits bought will be installed.

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In	19	4	4	4	4	3	3	3	3		3	2	2			
Out	19	4	4	4	4	3	3	3	3		3	2	2			

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a		INDIVIDUAL MODIFICATION																		
MODIFICATION TITLE:		<u>LITENING II Pod (23-00)</u>																		
MODELS OF SYSTEM AFFECTED:												TYPE MODIFICATION: <u>Upgrade</u>								
DESCRIPTION/JUSTIFICATION: The system will integrate and procure an external targeting pod that includes an Infrared (IR) and low-light TV targeting device capable of detecting, classifying, auto-tracking, and designating air-to-surface targets. The system will support first-pass autonomous delivery of conventional, precision guided, and accurate munitions to include Laser Maverick, GBU-12 and GBU-16. The system will provide targeting capabilities for the AV-8B fleet of Night Attack and Radar/Night attack aircraft through the end of it's service life. The addition of the LITENING II Targeting Pod gives the AV-8B (Night and Radar) the capability to perform precision targeting. Congressional adds of FY01 \$80M, FY02 \$24.7M , FY03 \$28.0M and FY04 \$37.0M to procure additional Litening II Precision Targeting Pods and integrate Litening into the AV-8B.																				
DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES: The Targeting Pod is a non developmental item and has been in full production for several years. It was a winner of a targeting FLIR competition for the Air Force Reserve and Air National Guard and put in service on their F-16s 2nd Qtr FY-00. The design, integration, and testing of the Targeting Pod for the AV-8B was done on the Radar and/or Night Attack during 3rd Qtr FY-00. The integration will utilize: existing aircraft software, a weapons station adapter, and Targeting Pod interface software. PEO(A) had approved the acquisition strategy to acquire the pods through an existing USAF contract and provided a targeting pod capability to the Fleet in 1st Qtr FY-02. Full Litening integration to utilize targeting information from the Litening Pod in OC1.2 to create aircraft targeting solutions will be developed and tested under this OSIP and introduced under the H20 OFP program.																				
FINANCIAL PLAN (TOA, \$ in Millions):																				
	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RDT&E																				
PROCUREMENT																				
Installation Kits, ECP Pod Provisions	138	0.3																		
POD Retrofit Kits																				
256 TO 512 AT Configuration			47	3.9																
512 ER TO 512 AT Configuration					9	3.0														
Installation Kits N/R		1.2																		
Installation Equipment, Pods																				
256	9	9.0																		
512 ER	47	61.1																		
512 AT	10	13.0	10	12.3	20	23.8														
CFE WRA SETS		2.6																		
Installation Equipment N/R		6.7																		
Engineering Change Orders		0.1																		
Data		0.4		0.2																
Training Equipment		3.5		0.1																
Support Equipment	10	1.3		0.1	20	0.2														
ILS		0.1																		
Other Support		21.4		11.4		10.0														
Interim Contractor Support																				
Installation Cost																				
TOTAL PROCUREMENT		120.7		28.0		37.0														

Notes:

1. Totals do not add due to rounding
2. Asterisk indicates amount less than 50K

Exhibit P-3a

INDIVIDUAL MODIFICATION

MODIFICATION TITLE: Open Systems Core Avionics Requirement (OSCAR) and Precision Strike (12-02)

MODELS OF SYSTEM AFFECTED: AV-8B Night, AV-8B Night/Radar TYPE MODIFICATION: Upgrade

DESCRIPTION/JUSTIFICATION:

The current AV-8B avionics do not have sufficient processor throughput and memory to support planned system upgrades. The OSCAR program will update the existing, obsolete avionics using Commercial Off the Shelf (COTS) open system architecture hardware that runs object-oriented design (OOD) and higher order language (HOL) software. This OSIP supports the procurement and retrofit installation of the Mission System Computer (MSC) and Warfare Management Computer (WMC) being developed under the OSCAR program. This OSIP also supports the procurement and retrofit installation of MIL-STD-1760 wiring. Installation of the MIL-STD-1760B wiring to support new weapons will require the addition of wiring to the fuselage, additional circuit breaks, and a new relay panel. Modifications to the wing and pylon wiring are also part of this modification. Subsequent system upgrades based on the OSCAR system will be a continuing effort to integrate precision weapons suitable for delivery from the Harrier platform, as well as the internal and pod mounted systems necessary to effect guidance and designation are essential to the continued relevance of the AV-8B to the war fighter. ECP-289 ECCM Mod Kit will be installed concurrent with OSCAR to provide the full integration of the Havequick/SINGARS capability.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

This system upgrade (ECP 270R2, ECP 285) is the production incorporation of the MSC, WMC and software being developed under the OSCAR program. The OSCAR program involves development, integration and operational test of the new MSC, WMC, and Operational Flight Program software that will use the MK-83 Joint Direct Attack Munitions on the AV-8B as well as full integration of Havequick/SINGARS. LRIP I decision was approved Feb 02. DT completed 4th quarter FY02. LRIP II decision was approved Apr 03. OPEVAL for OSCAR is scheduled for completion 2nd qtr 04. Initial operating capability is scheduled for Jan 05.

FINANCIAL PLAN (TOA, \$ in Millions):

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$		
RDT&E ELEMENT# 0604264N																				
PROCUREMENT																				
Installation Kits																				
MIL-STD-1760 Wiring Kits			10	2.3	6	1.5	15	3.3												
Installation Kits N/R																				
Installation Equipment																				
OSCAR Computers	52	8.9	48	9.6	24	6.0	22	5.4												
Installation Equipment N/R		3.3																		
Engineering Change Orders																				
Data		0.7		0.7		0.3		0.1												
Training Equipment		1.5		4.0		1.0														
Support Equipment		0.2		0.3																
ILS																				
Other Support		2.8		1.3		0.4		0.4												
Interim Contractor Support																				
Installation Cost					30	0.5	37	2.1												
TOTAL PROCUREMENT		17.5		18.2		9.7		11.3												

Notes: ECP-289 ECCM Mod Kits will be installed concurrent with OSCAR and installation costs will be incurred under OSIP 1202 Open Systems Core Avionics Requirement & Precision Strike

1. Totals do not add due to rounding

2. Asterisk indicates amount less than 50K

Exhibit P-3a

Exhibit P-3a**MODELS OF SYSTEMS AFFECTED:**AV-8B Night, AV-8B Night/RadarMODIFICATION TITLE: Open Systems Core Avionics Requirement (OSCAR) and Precision Strike (12-02)**INSTALLATION INFORMATION:****METHOD OF IMPLEMENTATION:**AFC installation will be accomplished by Naval Aviation Depot Drive-in Mod.**ADMINISTRATIVE LEADTIME:**9 Months**PRODUCTION LEADTIME:**17 Months**CONTRACT DATES:**FY 2003 Jul-03FY 2004 May-04FY 2005 Nov-04**DELIVERY DATE:**FY 2003 Dec-04FY 2004 Oct-05FY 2005 Apr-06

(\$ in Millions)

Cost:	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		2009		To Complete		TOTAL	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
FY 2002 & PY (134) kits					30	0.5	27	0.4												
FY 2003 (10) kits							10	1.6												
FY 2004 (6) kits																				
FY 2005 (15) kits																				
FY 2006 () kits																				
FY 2007 () kits																				
FY 2008 () kits																				
FY 2009 () kits																				
To Complete () kits																				
TOTAL					30	0.5	37	2.1												

FY02 buys of ECP-289 ECCM mod kits were procured in OSIP 2392, installation will be concurrent with OSCAR

Installation Schedule

FY 2002 & Prior	FY 2003				FY 2004				FY 2005				FY 2006			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
In							15	15	8	10	10	9				
Out							15	15	8	10	10	9				

	FY 2007				FY 2008				FY 2009				To Complete	TOTAL
	1	2	3	4	1	2	3	4	1	2	3	4		
In														
Out														

Exhibit P-3a		INDIVIDUAL MODIFICATION																																																																																																																																																																																																																																																																																																																																																																																					
MODIFICATION TITLE: <u>Zero Retention Force (06-03)</u>																																																																																																																																																																																																																																																																																																																																																																																							
MODELS OF SYSTEM AFFECTED: <u>All T/AV-8B Aircraft (TAV-8B, AV-8B Night, AV-8B Radar).</u>										TYPE MODIFICATION: <u>Safety</u>																																																																																																																																																																																																																																																																																																																																																																													
<p>DESCRIPTION/JUSTIFICATION:</p> <p>The purpose of the arming unit is to control the retention or release of an arming wire attached to the weapon. The ZRF enables reliability of flight selection of firing and weapon mode operations. The current BRU-36 arming unit (AU) has a history of problems and is not up to the standards of the AU's used on newer airframes. The Zero Retention Force Solenoid will be interchangeable with the SA-122 on all AV-8B models to provide reliable and dependable operation for in-flight selectability safe ordinance jettison.</p> <p>DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:</p> <p>Developmental Test complete Mar 03.</p> <p>FINANCIAL PLAN (TOA, \$ in Millions):</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Prior Years</th> <th colspan="2">FY 2003</th> <th colspan="2">FY 2004</th> <th colspan="2">FY 2005</th> <th colspan="2">FY 2006</th> <th colspan="2">FY 2007</th> <th colspan="2">FY 2008</th> <th colspan="2">FY 2009</th> <th colspan="2">To Complete</th> <th colspan="2">TOTAL</th> </tr> <tr> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> <th>Qty</th> <th>\$</th> </tr> </thead> <tbody> <tr> <td>RDT&E ELEMENT# 0604214N</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PROCUREMENT</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Kits</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Kits N/R</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Equipment</td> <td></td><td></td><td>65</td><td>1.5</td><td>65</td><td>1.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Equipment N/R</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Engineering Change Orders</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Data</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Training Equipment</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Support Equipment</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>ILS</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Other Support</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Interim Contractor Support</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Installation Cost</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>TOTAL PROCUREMENT</td> <td></td><td></td><td></td><td>1.5</td><td></td><td>1.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table> <p>Notes:</p> <ol style="list-style-type: none"> 1. 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Exhibit P-3a

Individual Modification

MODIFICATION TITLE: Engine Life Management Program (OSIP 02-04)MODELS OF SYSTEMS AFFECTED: F402-RR-408TYPE MODIFICATION: Safety

DESCRIPTION/JUSTIFICATION:

The AV-8B is a single engine aircraft with unique capabilities. The VSTOL environment is very unforgiving and allows no tolerance for engine problems. In the past, the Pegasus F402 has suffered from a less than optimal safety and reliability record demonstrating a 12.11 mishap (Class A) per 100,000 flight hours compared to a historical average rate of less than 2.0 over the rest of the Navy and Marine Corps in recent years. The Engine Life Management Program is a comprehensive program to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine. Funding provided is to incorporate Engineering Change Proposals to increase safety of flight and operational readiness of the F402-RR-408 Engine.

DEVELOPMENT STATUS/MAJOR DEVELOPMENT MILESTONES:

The Engine Life Management Program was developed in October 2000. The purpose of the program is to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine. The ELMP is comprised of several Engineering Project Description investigations and a series of bi-annual Accelerated Simulated Mission Endurance Tests (ASMET). The Engineering Project Description (EPD) investigations and ASMET tests provide data points for existing Fleet problems and predict future engineering issues with the F402-RR-408. The EPD investigations are conducted annually and an ASMET test is scheduled to begin 2Q/04 and complete 4Q/04. Engineering Change Proposals resulting from Engineering Investigations and ASMET terdown results will be researched and thier development formalized under the development program and incorporated into the F402-RR-408 via OSIP 02-04.

FINANCIAL PLAN: (TOA, \$ in Millions)

	Prior Years		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY2009		To Complete		Total	
	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$	Qty	\$
RD&E																				
PROCUREMENT																				
Installation Kits																				
ECP EPD Kit					58	3.0	33	1.7												
ECP ASMET04 Kit							138	2.6												
ECP ASMET06 Kit																				
ECP 3763																				
Various ECP																				
Installation Kits N/R																				
Installation Equipment																				
XXX Equip																				
Installation Equipment N/R																				
Engineering Change Orders																				
XXX Kit ECO XXX																				
XXX Equip ECO XXX																				
Data																				
Training Equipment																				
Support Equipment																				
ILS																				
Other Support					1.5		0.9													
Interim Contractor Support																				
Installation Cost																				
Total Procurement						4.5	5.2													

Notes:

1. Totals may not add due to rounding
2. Retrofit to be accomplished via attrition and O-Level Installation